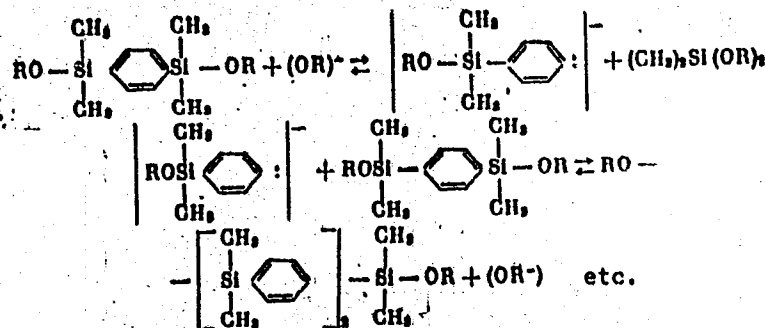


L 00265-66

ACCESSION NR: AP5013444



The reaction is catalyzed by KOH, alkali metal alcoholates, amines, etc. Disproportionation of 1,4-bis-(dimethylethoxysilyl)-benzene gives a dimer (360 molecular weight) in a 40% yield. Disproportionation of  $(\text{CH}_3)_2(\text{OC}_2\text{H}_5)\text{SiC}_6\text{H}_4\text{Si}(\text{OC}_2\text{H}_5)_3$  gave a polymer  $[(\text{CH}_3)_2\text{SiC}_6\text{H}_4]_{0.2}[(\text{C}_2\text{H}_5\text{O})_2\text{SiC}_6\text{H}_4]_{0.8}$  in a 98.7% yield. The kinetics of the disproportionation reaction are shown in fig. 1 of the Enclosure. Orig. art. has: 1 figure.

Card 2/4

L 00265-66

ACCESSION NR: AP5013444

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass (Scientific Research Institute of Plastics) 3

SUBMITTED: 14Jul64 44/66

ENCL: 01

SUB CODE: GC, OC

NO REF SOV: 000

OTHER: 003

Card 3/4

L 00265-66

ACCESSION NR: AP5013444

ENCLOSURE: 01

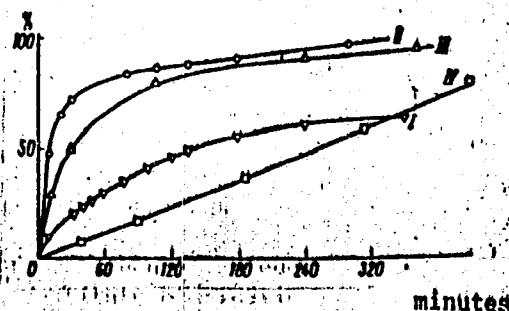


Fig. 1. I-- $(CH_3)_2(OC_2H_5)SiC_6H_4Si(CH_3)_2OC_2H_5$  at  $200^\circ C$  and with 1% KOH; II-- $C_2H_5O(CH_3)_2SiC_6H_4Si(CH_3)_2OC_2H_5$  at  $230^\circ C$  and with 1% KOH; III-- $(C_2H_5O)_2CH_3SiC_6H_4SiCH_3(OC_2H_5)_2$  at  $230^\circ C$  and with 1.5%  $C_2H_5ONa$ ; IV-- $(C_2H_5O)_3SiC_6H_4Si(OC_2H_5)_3$  at  $240^\circ C$  and with 1% KOH.

Card 4/4

L 7887-66 EWT(m)/EPF(c)/EWP(j)/T/EWP(t)/EWP(b) IJP(c) RM/JD  
 ACC NR: AP5025042 SOURCE CODE: UR/0286/65/000/016/0085/0085  
 AUTHORS: Pakhomov, V. I.; Andrianov, K. A.; Gel'perina, V. M.

ORG: none

TITLE: Method for obtaining silicon-organic compounds containing the chain silicon-divalent organic radical-silicon. Class 39, No. 173954

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 85

TOPIC TAGS: organosilicon compound, polymerization, polymer, monomer

ABSTRACT: This Author Certificate presents a method for obtaining silicon-organic compounds containing the chain silicon-divalent organic radical-silicon, by treating silicon-organic monomers. To simplify the process and to increase the yield of polymer silphenyl monomers containing an alkyl group and more than one alkoxy group at each silicon atom are used as starting reagents. The disproportionation of the monomers is carried out at or above 200C in the presence of alkali catalysts.

SUB CODE: 07/ SUBM DATE: 13Jun64

Card 1/1

UDC: 678.84

L 13915-66 CHT (a)/ENP (1) RM  
ACC NR: AP5027844 SOURCE CODE: UR/0020/65/165/001/0114/0116

AUTHORS: Zhinkin, D. Ya.; Morgunova, M. M.; Andrianov, K. A. (Academician)

ORG: none

TITLE: Reaction of hexamethyl disilazane with phenylisocyanate and phenylthioisocyanate compound

SOURCE: AN SSSR. Doklady, v. 165, no. 1, 1965, 114-116

TOPIC TAGS: silicon compound, silane, organic synthetic process, organic isocyanate compound

ABSTRACT: Reaction of equimolecular amounts of hexamethyldisilazane (I) with phenylisocyanate (II) and phenylthioisocyanate (III) has been investigated at high temperatures. Under these conditions, instead of trialkylsilylurea expected by the authors (D. Ya. Zhinkin, M. M. Morgunova, et al., DAN, 158, 641, 1964), trimethylsilyl-isocyanate (IV) (or thioisocyanate (V)) and N-phenyltrimethylsilylamine (VI) were formed, according to the equation

$$[(CH_3)_3Si]_2NH + XCNC_6H_5 \xrightarrow{120^\circ} (CH_3)_3SiNCX + (CH_3)_3SiNHC_6H_5$$

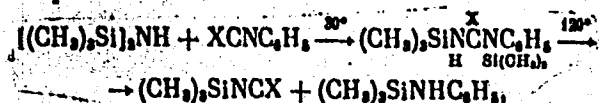
where X = O, S. Since heating of N, N'-bis-(trimethylsilyl)-N'-phenylurea (VII) (or thiourea (VIII)) resulted in formation of the same products, it was assumed that VII (or VIII) is an intermediate, formed in the first stages of interaction of I with II

Card 1/2 UDO: 547.245:547.239:547.343

11915-00

ACC NR: AP5027844

(or III), according to equation



where X = O, S. Detailed experimental data for the preparation of following compounds are given and their physical properties are reported: IV, b.p. 91-92C/760 mm; VI, b.p. 205-206C/760 mm; V, b.p. 143C/760 mm; VIII, m.p. 100-101C. Orig. art. has: 2 equations.

SUB CODE: 07/

SUBM DATE: 19Jan65/

SOV REF: 001/

OTH REF: 004

15  
Card 2/2

ANDRIANOV, K.A.; LAVYGIN, I.A.; PERTSOVA, N.V.

Fractional composition of (8-hydroxyquinoline) titanopolydimethyl-  
siloxanes. Izv. AN SSSR. Neorg. mat. 1 no.7:1001-1004 J1 '65.  
(MIRA 18:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ANDRIANOV, A.A.; KHAYDUK, Y.; KHANMASHVILI, I.M.

Ease of the elements of forming polymers with inorganic chains  
of molecules. Usp. khim. 34 no.1:27-43 Ja '65.

(MIRA 18:4)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.



ZHINKIN, D.Ya.; MORGUNOVA, M.M.; ANDRIANOV, K.A., akademik

Reaction of hexamethyldisilazane with phenyl thioisocyanate. Dokl.  
AN SSSR 165 no.1:114-116 N '65. (MIRA 18:10)

ANDRIANOV, K.A.; LAVYGIN, I.A.

Structure and properties of linear and branched  
polychelatetitanodimethylsiloxanes. Vysokom. soed. 7 no.9:  
1585-1591 S '65. (MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ACC NR: AP5025963

SOURCE CODE: UR/ 0190/65/007/010/1771/1775

AUTHOR: Andrianov, K. A.; Yermakova, M. N.; Sablina, G. F.

ORG: Institute of Macromolecular Compounds, AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

TITLE: Condensation of borondimethylsiloxane oligomers with tributoxyaluminum

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 10, 1965, 1771-1775

TOPIC TAGS: organoboron compound, organoaluminum compound, oligomer, condensation reaction, high polymer, polymer physical chemistry, polymer structure, plastic deformation, elongation, SILOXANE

ABSTRACT: The condensation of tributoxyaluminum with branched borondimethylsiloxane oligomers of the general formula  $B[(OSi(CH_3)_2)_n OH]_3$  with values of n varying from 15 to 220 was investigated. Condensation rate and structuration is inversely proportional to n of the oligomer. High molecular weight ( $1 \times 10^6$ ) polymers are obtainable. Examination of thermomechanical properties indicated the polymers obtained prior to gel formation are not cross-linked, but structuration

Card 1/2

UDC: 541.64+678.86

ANDRIANOV, K.A., akademik; MAKAROVA, L.I.

Synthesis of polyatomic organosilicon ether alcohols. Dokl. AN  
SSSR 161 no.4:833-835 Ap '65. (MIRA 18:5)

L 11791-66 A ENT(m)/ENP(j) RM

ACC NR: AP6002478

SOURCE CODE: UR/0191/66/000/001/0023/0025

AUTHOR: <sup>44,55</sup> Zhdanov, A. A.; <sup>44,55</sup> Severnyy, V. V.; <sup>44,55</sup> Gutsyt, E. Yu.; <sup>44,55</sup> Andrianov, K. A.

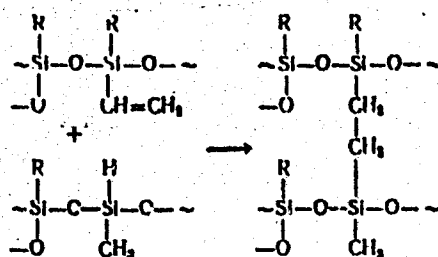
ORG: none

TITLE: Polyaddition reaction as a curing method for polyorganosiloxanes

SOURCE: Plasticheskiye massy, no. 1, 1966, 23-25

TOPIC TAGS: silicone, polysiloxane, ~~curing~~, heat resistant plastic, *oligomer*, *organic synthetic process*

ABSTRACT: A study has been made of the addition reaction



as a method of curing polyorganosiloxanes. Cure by this method was expected to produce solid, monolithic materials because no volatiles are evolved. Two series  
Card 1/2

UDC: 678.84

ANDRIANOV, K.A.; TALANOV, V.N.; KHANANASHVILI, L.M.; SOBOLEV, Ye.S.

Interaction of  $\alpha,\omega$ -dichlorodimethylsiloxanes with ethylamine  
and diethylamine. Izv. AN SSSR. Neorg. mat. 1 no.11:1849-  
1852 N '65. (MIRA 18:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
M.V. Lomonosova. Submitted June 3, 1965.

L 15790-66 EWT(m)/EWP(j) RM  
ACC NR: AP6002225 SOURCE CODE: UR/0080/65/038/012/2882/2885  
AUTHOR: Lobusevich, N. P.; Trofimova, I. V.; Andrianov, K. A.; Golubtsov, S. A.  
ORG: none 25  
TITLE: Effect of dimethyl ether, carbon dioxide, and carbon monoxide on the syn-  
thesis of methylchlorosilanes 44/66 B  
SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2882-2885  
TOPIC TAGS: carbon monoxide, copper containing alloy, carbon dioxide  
ABSTRACT: The effect of dimethyl ether in the reaction between methyl chloride with silicon alloys containing 20% Cu and 10% Cu, respectively, activated by 0.002-0.004% Sb in the boiling layer at atmospheric and higher pressures was studied. Carbon dioxide and carbon monoxide (0.5-14.5%) were studied in the same reaction at atmospheric pressure using various contact masses. It was found that dimethyl ether, carbon monoxide and, under certain conditions, carbon dioxide are contact inhibitors of the reaction which produces methylchlorosilanes. The inhibiting effect of carbon dioxide and dimethyl ether is attributed to carbon monoxide which causes ir-  
UDC: 547.211'222'245  
Card 1/2

L 16200-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6002226

SOURCE CODE: UR/0080/65/038/012/2886/2887

AUTHOR: Lobusevich, N. P.; Trofimova, I. V.; Andrianov, K. A.; Golubtsov, S. A.

ORG: none

TITLE: Chemisorptive action of impurities and the effect of chlorosilanes and methylchlorosilanes <sup>28</sup><sub>B</sub>

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2886-2887

TOPIC TAGS: chemisorption, chlorosilane, copper containing alloy, silicon containing alloy

ABSTRACT: The chemisorptive mechanism of action of the impurities is experimentally confirmed by introducing reaction products, chlorosilanes and methylchlorosilanes, into methyl chloride. It has previously been noted that the mechanism of action of the impurities is associated with their adsorption on the active centers and with the pitting of the copper catalyst. The introduction of from 0.5 to 2.0% of chlorosilanes or methylchlorosilanes into methyl chloride results in a two to three-fold increase in productivity and an increase of dimethyldichlorosilane in the mix-

UDC: 661.723-13

Card 1/2



L 16200-66

ACC NR: AP6002226

ture. The different effects of reaction products on the interaction of the alloys with pure and technical methyl chloride is apparently associated with the selective adsorption of impurities. The introduction of insignificant amounts of reaction products into methyl chloride and the preliminary treatment of the alloys with chlorosilanes or methyl chlorosilanes result in their selective adsorption on the catalyst which prevents pitting of the catalyst by harmful impurities and improves the indicators of the process. It is shown that the activity of the reaction products from methyl chloride and silicon in preventing the harmful effect of impurities increases in the series:  $\text{HSiCl}_3 \geq \text{SiCl}_4 > \text{CH}_3\text{SiCl}_3 > (\text{CH}_3)_3\text{SiCl} > (\text{CH}_3)_2\text{SiCl}_2 > \text{CH}_3\text{HSiCl}_2$ . Orig. art. has: 2 tables.

SUB CODE: 07/

SUBM DATE: 09Jul63/

ORIG REF: 001/

OTH REF: 000

Card 2/2 1100

ANDRIANOV, K.A.; DABAGOVA, A.K.; LEVKOVICH, Ye.A.

Synthesis of (chloromethyl) methylphenylchlorosilane and its derivatives. Izv. AN SSSR. Ser. khim. no. 1:97-100 '66.

(MIRA 19:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. Submitted September 2, 1963.

L 114536-66 EMT(m)/T/EMP(j) FM  
ACC NR: AP6006363 (A) SOURCE CODE: UR/0413/66/000/002/0095/0096

INVENTOR: Andrianov, K. A.; Kononov, A. M.; Makarova, N. N. 14

ORG: none

TITLE: Preparative method for polysilazanes.<sup>71</sup> Class 39, No. 178108 B 15

SOURCE: Izobretaniya, promyshlennyye obraztsey, tovarnyye znaki,  
no. 2, 1966, 95-96

TOPIC TAGS: polysilazane, polymerization

ABSTRACT: An Author Certificate has been issued for a preparative method for linear or spiro polysilazanes. The method involves polymerization<sup>1,413</sup> at above 300C of alkylphenyldisilazanes and alkyl-phenyl(phenylamino)silanes in the presence of alkali. [30]

SUB CODE: 11/ SUBM DATE: 13Mar65/ ATD PRESS: 4198  
07/

Cord 1/1 UDC: 678.84

1. 11/07-00 SWI(m)/SWI(J)/I NM

ACC NR: AP6002098

(A)

SOURCE CODE: UR/0062/65/000/011/1976/1982

AUTHORS: Andrianov, K. A.; Kurasheva, N. A.ORG: Institute for Hetero-organic Compounds, Academy of Sciences, SSSR (Institut elemento-organicheskikh soedineniy Akademii nauk SSSR)TITLE: Titaniumdimethylsiloxane oligomers

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1965, 1976-1982

TOPIC TAGS: oligomer, titanium compound, organosilicon compound, organotitanium compound, siloxane

ABSTRACT: The interaction of titanium tetrachloride and bis (trimethylsiloxy)-dichlorotitanium with  $\alpha$ -oxy- $\omega$ -trimethylsiloxydimethylsiloxanes and also the interaction of tetrakis ( $\omega$ -oxydimethylsiloxane) titaniums with trimethylchlor-silane was investigated to extend the work of K. A. Andrianov, N. A. Kurasheva, and V. A. Avilov, (Izv. AN SSSR Ser. khim., 1965, 1616). A reaction scheme for the synthesis is proposed. The heat of reaction, glass temperature, index of refraction, viscosity at 20C and 120C, and the density of the synthesized oligomers were determined. The experimental results are presented in graphs and tables (see Fig. 1). The temperature dependence of the viscosity was determined. It is concluded that branched chain oligomers have a lower density and viscosity than straight chain oligomers and bis(trimethylsiloxy) -( $\omega$ -trimethylsiloxydimethylsiloxane) titaniums.

Card 1/2

UDC: 542.91+546.287+546.821

L 14709-66

ACC NR:

AP6002098

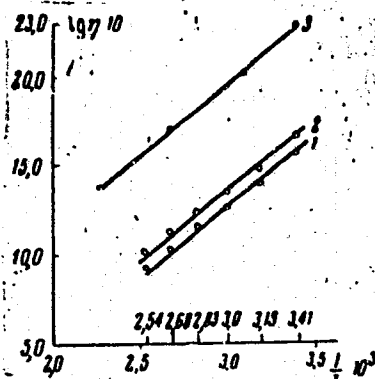
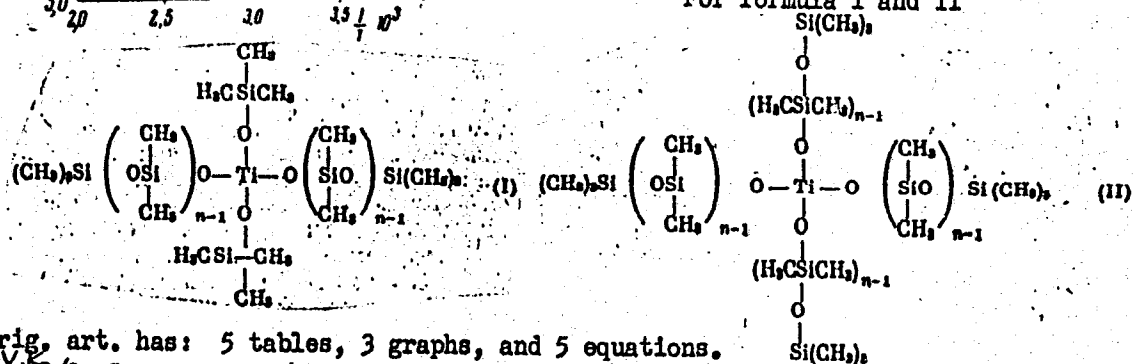


Fig. 1. Dependence of the logarithm of the viscosity on the magnitude of the reciprocal of the absolute temperature. 1 - branched oligomer of general formula (II),  $n = 24$ , molecular weight 7213; 2 - branched oligomer of general formula (I),  $n = 48$ , molecular weight 7360; 3 - linear polydimethylsiloxanes,  $n = 97$ , molecular weight 7192. For formula I and II



Orig. art. has: 5 tables, 3 graphs, and 5 equations.

Card 2/2 SUB CODE: 07/ SUM DATE: 26Jul63/ ORIG REF: 004

ANDRIANOV, K.A.; SIPYAGINA, M.A.; GASHNIKOVA, N.P.; FROLOVA, Z.M.

Synthesis of  $\alpha, \omega$ -disodiumhydroxymethylphenylsiloxanes and  
 $\alpha$ -sodiumhydroxy- $\omega$ -trimethyl(triphenyl)siloxymethylphenylsil-  
oxanes. Izv. AN SSSR. Neorg. mat. 1 no.9:1441-1446 S '65.  
(MIRA 18:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.

L 34102-66 EWT(m)/EWP(j)/T  
ACC NR: AP6008710

IJP(c) RM  
SOURCE CODE: UR/0079/65/035/011/2020/2021

AUTHOR: Andrianov, K. A.; Astakhin, V. V.; Melikyan, M. O.; Mushegyan, N. G.;  
Pyzhov, V. K.

ORG: none

32  
B

TITLE: Synthesis of ethoxypolyorganosiloxanes

SOURCE: Zhurnal obshchey khimii, v. 35, no. 11, 1965, 2020-2021

TOPIC TAGS: organosilicon compound, silane, siloxane

ABSTRACT: The telomerization<sup>1</sup> reaction of octamethylcyclotetrasiloxane<sup>1</sup> with phenyltri-chlorosilane and ethyltrichlorosilane was investigated. Since the telomerization reaction in the presence of catalysts is known to be complicated by side processes forming oligomer homologs instead of telomers, the experiments were carried out in glass ampoules, and in order to increase the conversion, the temperature was raised to 300C. The oligomers obtained were converted into ethoxy derivatives by the the action of alcohol in the presence of a hydrogen chloride acceptor. The reaction proceeds as follows:

Card 1/2

UDC: 547.1'128

Card 2/2

ANDRIANOV, K.A.; KOTRELEV, G.V.; KOTOV, V.M.

Ammonolysis of higher alkyltrichlorosilanes. Zhur.et.khim. 35  
no.12:2176-2180 D '65. (MIRA 19:1)

1. Submitted December 3, 1964.



L 20977-66 EWT(m)/EWP(j) RM

ACCESSION NR: AP5021673

UR/0080/65/038/008/1884/1886

547.222

AUTHOR: Lobusevich, N. P.; Trofimova, I. V.; Andrianov, K. A.; Golubtsov, S. A.

TITLE: Effect of sulfur dioxide on the synthesis of methylchlorosilanes

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 8, 1965, 1884-1886

TOPIC TAGS: silane, catalysis, sulfur compound, silicate, copper, silicon, aluminum, antimony, chloride

ABSTRACT: The effect of sulfur dioxide was evaluated with respect to the yield and the content of dimethylchlorosilane in the mixture. With a content of sulfur dioxide greater than 0.002% in methyl chloride, there is a decrease in the overall activity of copper silicate promoted with antimony. A decrease in selective activity in the synthesis of dimethylchlorosilane is observed with an increase in concentration of sulfur dioxide from 0.002 to 0.01% and at concentrations from 0.01 to 1.0% the content of dimethylchlorosilane is practically unchanged. Selective activity of alloys with the composition Cu<sub>3</sub>Si(eta phase) in the absence of a promoter, as well as of mixtures of copper and silicon powders, decreases more rapidly than the activity of analogous alloys containing 0.005% antimony.

Card 1/2

L 20977-56

ACCESSION NR: AP5021673

With an increase in concentration of sulfur dioxide up to 2%, the synthesis of methylchlorosilanes over all the above catalysts stops. A particularly strong effect of sulfur dioxide is observed on the activity of alloys with increased content of aluminum (1% in an alloy with silicon and 87% copper). At sulfur dioxide concentrations of 0.002% the synthesis ceases. Mixtures of copper, silicon, and aluminum powders have a satisfactory and stable overall activity, but the selective activity decreases. With an increase in titanium content (0.5%) in alloys or in mixtures of copper and silicon powders, the introduction of sulfur dioxide into the methyl chloride leads to a decrease in activity and to a sharp increase in content of high melting products (up to 40% of the weight of the methylchlorosilane mixture). It was found that with an increase in reaction time of methyl chloride with a mixture of copper and silicon powders in the presence of 0.8% sulfur dioxide, the poisoning effect of the latter becomes stronger. Orig. art has: 5 figures and 1 table

ASSOCIATION: None

SUBMITTED: 17Jun63

NR REF SOV: 001

ENCL: 00

OTHER: 000

SUB\_CODE: MM, IC

Card 2/2 *MGS*

L 21188-66 EWT(m)/EWP(j)/T/EWP(t)/ETC(m)-6 IJP(c) JD/WW/RM

ACC NR: AP6008047

(A)

SOURCE CODE: UR/0020/66/166/004/0855/0856

AUTHOR: Andrianov, K. A. (Academician); Kurakov, G. A.; Sushchentsova, F. F.;  
Myagkov, V. A.; Avilov, V. A.

+1  
45  
B

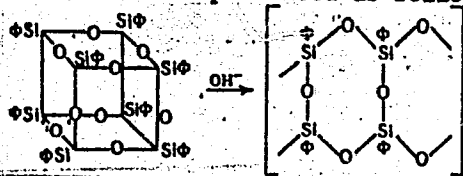
ORG: All-Union Scientific Research Institute of Synthetic Fibers (Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh volokon); Moscow Institute of Fine Chemical Technology im. M. V. Lomonosova (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Polymerization of phenylcyclotrisilsesquioxanes

SOURCE: AN SSSR. Doklady, v. 166, no. 4, 1966, 855-856

TOPIC TAGS: organosilicon compound, polymerization

ABSTRACT: The octamer  $(C_6H_5SiO_{1.5})_8$  was synthesized in order to study the reaction of its polymerization which can be represented as follows:



Card 1/2

L 21188-66

ACC NR: AP6008047

where  $\phi = C_6H_5$  and the hydroxide serves as the catalyst. Polyphenylsilsesquioxanes with a reduced viscosity in 1% benzene solution equal to 0.487, 1.974, 2.2, and 5.84 were obtained. All readily formed transparent films with glass-transition temperatures above 400°C. Thermogravimetric analysis showed that the polymers have very high degradation temperatures. Heating to 900°C does not cause the degradation of the polysilsesquioxane part of the polymer; this sets these polymers apart from polyorganosiloxanes having linear and branched chains in which not only the organic part of the molecule but also the main chains undergo degradation. Orig. art. has: 1 table.

SUB CODE: 07/

SUBM DATE: 05Jun65/

ORIG REF: 002/

OTH REF: 002

Card 2/2 BLC

L 14571-66 EWT(m)/EWP(j)/T WW/RM

ACC NR: AP6004390

SOURCE CODE: UR/0020/66/166/003/0593/0594

AUTHOR: Andrianov, K. A. (Academician); Slonimskiy, G. L.; Kitaygorodskiy, A. I.; Zhdanov, A. A.; Belavtseva, Ye. M.; Levin, V. Yu.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elemento-organicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Morphological forms of high-elastic polymers 7.4456

SOURCE: AN SSSR. Doklady v. 166, no. 3, 1966, 593-594

TOPIC TAGS: morphological form, high elastic polymer, silicone, polysiloxane

ABSTRACT: Recent studies of morphological forms in high-elastic polymers have disproved the older theory of high elasticity which is based on the idea of random entangled macromolecules. V. A. Kargin and associates (DAN, 144, 1089, 1962) have observed fibrillar structures in these polymers. In this study the morphological forms of high-elastic polymers have been studied with polyaluminodimethylsiloxanes (I) synthesized by polycondensation of aluminum butoxide with  $\alpha, \omega$ -dihydroxypolydimethylsiloxane. The morphological forms of I were investigated by electron microscopy. I was shown to have a globular structure with globular formations varying in size from 50—100 to over 1000Å. The small globules were, possibly, macromolecules. The large globular formations consisted of small globules which were either aggregated as a result of molecular interaction, or linked by chemical bonds formed in polycon-

Card 1/2

UDC: 541.68

L 14571-66

ACC NR: AP6004390

densation, or both. This globular structure, formed in two steps, is apparently one of the common morphological forms in amorphous polymers both in the high-elastic and the glassy (G. L. Slonimsky, V. V. Korshak, et al. DAN, 156, 924, 1964) states. The presence of globular and above-mentioned fibrillar morphological forms in high-elastic polymers raises the following problems: 1) fundamental review of the older theory of high elasticity; 2) studies of the effect of the morphological forms of amorphous polymers and their high-elastic and mechanical properties; 3) determination of the effect of the synthesis conditions and conditions for the formations of a solid or elastic body on the type of morphological forms produced. Orig. art. has: 1 figure.

[B0]

SUB CODE: 11/ SUBM DATE: 20Jul65/ ORIG REF: 007/ ATD PRESS: 4190

CC  
Card 2/2

L 31890-66

L 31890-66

EST(m)/EWP(j)/T WW/RM

ACC NR: AP6012528

(A)

SOURCE CODE: UR/0062/66/000/003/0472/0475

AUTHOR: Andrianov, K. A.; Kotrelev, G. V.

ORG: Institute of Elemental Organic Compounds, Academy of Sciences SSSR (Institut elementarnoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Ammonolysis of alkyltrichlorosilanes and aryltrichlorosilanes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 472-475

TOPIC TAGS: ammonolysis, silane, organic chemistry, alkyltrichlorosilane, aryltrichlorosilane, polymer, IR spectrum

ABSTRACT: The purpose of this article is to determine the possibility and direction of ammonolysis of alkyl- and aryltrichlorosilanes. The ammonolysis of methyl-, ethyl- and phenyltrichlorosilanes by gaseous ammonia in a solvent medium was investigated. Experiments have shown that instead of the expected branched and crosslinked ammonolysis products, polymer compounds soluble in benzene are produced. Experimental data show that ammonolysis of ethyltrichlorosilane leads to the formation of low molecular cyclic products and cyclic polymers. While ammonolysis of methyltrichlorosilane is similar, branching and structuring of the reaction products takes place. Both soluble and insoluble products are formed. The elemental analyses and IR spectra show that the crystalline substance produced here is an analog of the cyclic compound produced in the

UDC: 546.287 + 542.952

Card 1/2

L 31889-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6012529

(A)

SOURCE CODE: UR/0062/66/000/003/0475/0478

AUTHOR: Morozova, L. P.; Andrianov, K. A.; Morozov, N. G.; Golubtsov, S. A.

30  
B

ORG: none

TITLE: Formation of alkyl(aryl)chlorosilanes during direct reaction of alkyl(aryl)chlorides with silicon. Communication 5. Effect of secondary decomposition process of methyldichlorosilane on the synthesis of methylchlorosilanes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 475-478

TOPIC TAGS: catalyst, methyldichlorosilane, silane, organic synthesis

ABSTRACT: It was found that in decomposition reactions of methyldichlorosilane the most active catalysts are those which possess high selectivity in the synthesis of methyldichlorosilane. When the activity of catalysts in the synthesis is increased so that the yield increases from 2.2 to 25.5 g of methyldichlorosilane per kg of mass per hour, the degree of decomposition of methyldichlorosilane under identical conditions also increases from 4.0 to 67.2% respectively. This is explained by the fact that both synthesis and decomposition of methyldichlorosilane occur on the same active centers. It was shown experimentally that the degree of decomposition of methyldichlorosilane in a stream of methyl chloride decreases by about 1 order of magnitude as compared with

UDC: 542.91+546.287+542.97

Card 1/2

L 31889-66

ACC NR: AP6012529

decomposition in the stream of nitrogen, and even for the most active catalyst it does not exceed 10.8%. It is shown that chloromethane is preferentially absorbed on the active centers of the catalyst. The rate of decomposition of methyldichlorosilane through the reaction tube following the passage of chloromethane decreased about a factor of 5 as compared with the experiment where methyldichlorosilane was passed first. Under direct synthesis conditions, in the silicon copper contact catalytic mass, when the active centers in the reaction zone are primarily occupied by the adsorbed chloromethane, decomposition of methyldichlorosilane proceeds to an insignificant extent, which explains the possibility of its synthesis as one of the major products of the reaction of silicon with chloromethane. Orig. art. has: 2 figures.

SUB CODE: 07/

SUBM DATE: 24Oct63/

ORIG REF: 005/

OTH REF: 001

1.9

Card 2/2



L 31888-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6012530

(A)

SOURCE CODE: UR/0062/66/000/003/0478/0482

AUTHOR: Popeleva, G. S.; Andrianov, K. A.; Golubtsov, S. A.

27  
B

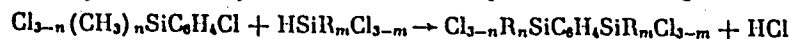
ORG: none

TITLE: Study of the reaction of methyl(chlorophenyl)chlorosilanes with hydrochlorosilanes

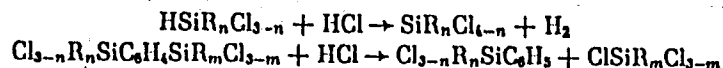
SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 478-482

TOPIC TAGS: silane, organic synthesis, condensation reaction, substitution reaction

ABSTRACT: Using the previously described thermal condensation method [Authors Certificate No. 134699; *Zh. obshch. khimii*, 32, 557 (1962)] alkylchlorosilane hydrides were condensed with alkyl(chloroaryl)chlorosilanes by the following scheme:



where  $n=0, 1, 2, 3$ ;  $m=0, 1, 2$ . The condensation reaction is accompanied by a side reaction involving the reduction of chlorine in the aryl radical by the hydrogen of chlorosilane hydride. The products of substitution of hydrogen at the silicon by chlorine can be formed also by the decomposition reaction in hydrogen chloride medium as follows:



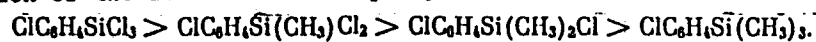
Card 1/2

UDC: 542.91+546.287

L 31888-66

ACC NR: AP6012530

Here in the case of the formation of bis(methyldichlorosilyl)benzene decomposition and reduction reactions are approximately equivalent. It was shown that not only hydrogen can be substituted by chlorine, but also the organic radical connected to the silicon atom both in the starting materials as well as in the reaction products. The synthesized products are: bis(trichlorosilyl)benzene, bis(dimethylchlorosilyl)benzene, 1-methyldichlorosilyl-4-trichlorosilylbenzene, 1-dimethylchlorosilyl-4-trichlorosilylbenzene, 1-methyldichlorosilyl-4-dimethylchlorosilylbenzene, 1-trimethylsilyl-4-trichlorosilylbenzene and 1-trimethylsilyl-4-methyldichlorosilylbenzene. The best yield of silphenylene compounds was produced by chlorophenyltrichlorosilane ( $n=0$ ), but as  $n$  increases the yield of the principal product decreases. The investigated alkyl(chloroaryl)chlorosilanes are arranged in the following series in terms of their reactivity in the reaction of the formation of silphenyl derivatives:



Orig. art. has: 1 figure.

SUB CODE: 07/

SUBM DATE: 12Nov63/

ORIG REF: 006/

OTH REF: 008

LS  
Card 2/2

L 32764-66 EWT(m)/EWP(j)/T IJP(c) RM  
ACC NR: AP6009877 (A) SOURCE CODE: UR/0413/66/000/004/0069/0069

INVENTOR: Andrianov, K. A.; Levin, B. B.; Rodionova, Ye. F.; Fetin, I. N. 37  
B

ORG: none

TITLE: Preparation of phosphorus-containing polymers. Class 39, No. 178985 15

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 69

TOPIC TAGS: polymer, phosphorus containing polymer, copolymerization

ABSTRACT: An Author Certificate has been issued describing a method of preparing phosphorus-containing polymers by initiated copolymerization of vinyl monomers and phosphorus compounds. To broaden the variety of phosphorus polymers, the monoester of alpha-phenylvinylphosphinic acid is suggested as the phosphorus compound. [LD]

SUB CODE: 11/ SUBM DATE: 11Nov64

Card 1/1 BLG

UDC: 678.746.87-13.002.2

I 33514-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6015054

(A)

SOURCE CODE: UR/0190/66/008/005/0898/0902

AUTHOR: Andrianov, K. A.; Slonimskiy, G. L.; Zhdanov, A. A.; Kashutina, E. A.; Levin, V. YU.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soedineniy AN SSSR)

TITLE: Thermomechanical investigation of polyorganometallic siloxanes containing bivalent metals

SOURCE: Vysokomolekulyarnyye soedineniya, v. 8, no. 5, 1966, 898-902

TOPIC TAGS: polymer, metal, siloxane, atom, thermomechanical property, bivalent metal

ABSTRACT: Thermomechanical properties of polymers with atoms of bivalent metals in the siloxane chain have been investigated. It was shown that the introduction into the basic polymer chain of metal atoms capable of forming coordination bonds considerably changed the thermomechanical properties of polymers. The effect of metal atoms on the flow temperature of polymers depends on the distance between the metal atoms and on the nature of the metal. Orig. art. has: 5 figures, 1 formula, and 1 table. [NT]

SUB CODE: 11, 07/ SUBM DATE: 22May65/ ORIG REF: 009/ OTH REF: 001

Card

1/1

UDC: 678.01:53+678.84

L 24488-66 EWT(m)/EWP(j)/T IJP(c) RM  
 ACC NR: AP6006987 (A) SOURCE CODE: UR/0190/66/008/002/0352/0356  
 AUTHORS: Andrianov, K. A.; Yakushkina, S. Ye.; Karaseva, T. M.; Pertsova, N. V.  
 ORG: Institute of Elementoorganic Compounds, AN SSSR (Institut elemento-organicheskikh soyedineniy AN SSSR) 34/B  
 TITLE: Polymerization of methylphenylcyclotrisiloxanes 7  
 SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 352-356  
 TOPIC TAGS: polymerization, linear polymer, polysiloxane, polymerization rate, solid viscosity  
 ABSTRACT: Polymerization of eight-membered cyclotrisiloxanes with varying numbers of methyl and phenyl groups was investigated, and the relationship between viscosity, molecular weight, and the structure of the polymers was studied. Reaction performed at 150C in the presence of 0.5% KOH yielded linear polymers of high molecular weight. It was established that the number of phenyl groups in the ring affects the polymerization rate, as can be seen in Fig. 1. Apparently, in the process of polymerization of methylphenylcyclotetrasiloxanes and the fission of the Si-O bond, phenyl radicals are split off. The rate of this process decreases with an  
 Card 1/2 UDC: 66.095.26+678.84 2

L-24488-66  
ACC NR: AP6006987

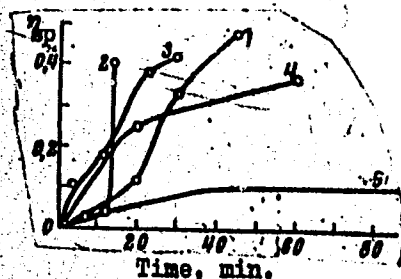


Fig. 1. Specific viscosity as a function of polymerization time: 1 - octamethylcyclotetrasiloxane, 2 - heptamethylphenylcyclotetrasiloxane, 3 - hexamethyldiphenylcyclotetrasiloxane, 4 - pentamethyltriphenylcyclotetrasiloxane, 5 - tetramethyltetraphenylcyclotetrasiloxane.

increased number of phenyl groups. For polymers having 48% of phenyl groups, the relationship between molecular weight and specific viscosity  $[\eta] = 1.24 \times 10^{-4} M^{0.62}$ . Orig. art. has: 2 tables, 4 figures, and 3 formulas.

SUB CODE: 07/ SUBM DATE: 24Mar65/ ORIG REF: 004/ OTH REF: 002

Card 2/2

PB

L 36993-66 EWP(j)/EWT(m)/T IJP(c) RM

ACC NR: AP6008503

SOURCE CODE: UR/0062/66/000/001/0097/0100

AUTHOR: Andrianov, K. A.; Dabagova, A. K.; Levkovich, Ye. A.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences, SSSR (Institut  
elementoorganicheskikh soedineniy Akademii nauk SSSR)

TITLE: Synthesis of (chloromethyl)methylphenylchlorosilane and its derivatives

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1966, 97-100

TOPIC TAGS: chemical synthesis, silane, polymerization

ABSTRACT: In this investigation the authors synthesize (chloromethyl)methylphenylchlorosilane from (chloromethyl)methyldichlorosilane and bromobenzene by Grignard's reaction. The yield of distilled (chloromethyl)methylphenylchlorosilane was about 50% of the theoretical. This compound usually reacts with ethanol to form (chloromethyl)methylphenylethoxysilane. The best yield of the new compound, about 90% of the theoretical, was observed when the reaction took place at room temperature. The reaction of (chloromethyl)methylphenylethoxysilane with potassium methacrylate yielded (methylmethacrylate)methylphenylethoxysilane. Its yield was 30% of the theoretical. This compound can be polymerized along the double C-C bond and enters into a condensation and cocondensation refraction owing to the presence of the ethoxy group at the silicon atom.

Card 1/2

UDC: 542.91+546.287

L 36993-66

ACC NR: AP6008503

Polymerization occurs at low temperatures with a slow increase of viscosity with the formation of a vitreous polymer. By cocondensation of this compound with trimethylacetoxysilane in the presence of 10 wt.% conc. HCl the authors obtained 1-[ (methylemethacrylate)methylphenyl ] trimethyldisiloxane. The reaction product is a transparent, almost odorless liquid polymerizing upon heating in the presence of peroxide initiators. The physicochemical properties of these compounds are given in a table. Orig. art. has: 3 tables.

SUB CODE: 07/ SUBM DATE: 02Sep63/ ORIG REF: 001/ OTH REF: 000

Card 2/2 *JS*



L 35328-66 EWT(m)/EWT(i) RM  
ACC NR: AP6026835

SOURCE CODE: UR/0020/66/166/002/0349/0352

AUTHOR: Andrianov, K.A. (Academician); Fedin, E.I.; Lavygin, I.A.; Gorskaya, N.V.; Lavrukhin, B.D.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Reaction of 8-hydroxyquinoline tributoxytitanium<sup>1</sup> with triethyl hydroxysilane<sup>1</sup>

SOURCE: AN SSSR. Doklady, v. 166, no. 2, 1966, 349-352

TOPIC TAGS: spectrometer, reaction mechanism, titanium compound, silane, esterification; chemical stability

ABSTRACT: A nuclear magnetic resonance spectrometer was used for studying the mechanism of the reaction between 8-hydroxyquinoline tributoxytitanium and triethyl hydroxysilane. Spectra are given for various reagent concentrations. The first event in the reaction is apparently coordination of the oxygen in the hydroxyl radical of the triethyl hydroxysilane with a titanium atom which results in transesterification by the mechanism of bimolecular nucleophilic substitution. Substitution of a single butoxyl group probably results in such an unstable molecule that disproportionation takes place with the formation of stable compounds having tetravalent and hexacoordinate saturated titanium atoms. The experimental procedure is described.

Orig. art. has: 1 figure and 1 table. JPRS: 36, 4557  
SUB CODE: 07 / SUBM DATE: 21Jul65 / ORIG REF: 002

UDC: 546.824

Card 1/1 *LLH*

L-10125-66 EWT(m)/EWP(j) JW/JWD/RM

ACC NR: AP6011655

SOURCE CODE: UR/0020/66/167/003/0571/0574

AUTHOR: Andrianov, K. A. (Academician); Sidorov, V. I.; Khananashvili, L. M. 49  
B

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: The nitrosochlorination of alkenylmethylsiloxanes

SOURCE: AN SSSR: Doklady, v. 167, no., 3, 1966, 571-574

TOPIC TAGS: reaction mechanism, chemical reaction, siloxane, chlorination, organic nitroso compound, *OLEFIN, CHLORIDE*

ABSTRACT: The authors analyze the addition of nitrosyl chloride to olefins on the example of 3-vinyl-heptamethyl-trisiloxane (I) and allyl-pentamethyl-disiloxane. (II). The experiments showed that in the case of I, the only reaction product was the corresponding nitrochloride (III). The probable reaction course is

Card 1/2

UDC: 547.128

L 38981-66 EWT(m)/ENP(1)/T IJP(c) RM

ACC NR: AP6011433 (A)

SOURCE CODE: UR/0020/66/167/004/0811/0814

AUTHOR: Andrianov, K. A. (Academician); Kotov, V. M.

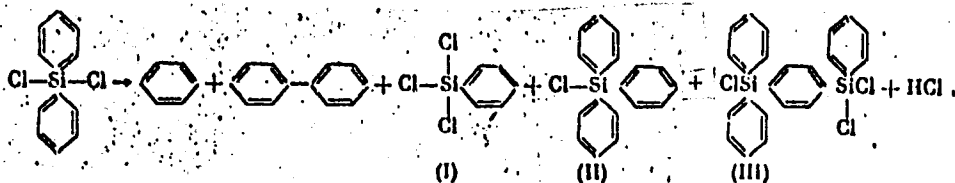
ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut  
elementoorganicheskikh soedineniy Akademii nauk SSSR)

TITLE: The disproportionation of diphenyldichlorosilane

SOURCE: AN SSSR. Doklady, v. 167, no. 4, 1966, 811-814

TOPIC TAGS: silane, organosilicon compound, chlorinated organic compound

ABSTRACT: When diphenyldichlorosilane was heated in a tubular electric furnace to 480—540C, thermal rearrangement of the diphenyldichlorosilane took pl. a. HCl was evolved and disilylphenylene was formed. The reaction progressed as follows:



Card 1/2

L 38981-66

ACC NR: AP6011433

0

The presence of diphenyl in the reaction products was proven chromatographically. Elementary analysis of I and II indicated phenyltrichlorosilane and triphenylchlorosilane. Analysis and molecular weight studies of III indicated triphenyltrichlorodisilyl phenylene. Infrared analysis, showing an adsorption band at  $790\text{ cm}^{-1}$ , indicated the probable presence of a phenyl grouping in III. The properties of the reaction products are presented in tabular form. As the temperature of the experiment was increased from 480 to 540C, the amount of diphenyldichlorosilane taking part in the reaction increased proportionally, as did the yield of benzene and phenyltrichlorosilane. The yield of the mixture of high-boiling chlorosilanes showed a maximum at 500C. At 500C, the high-boiling chlorosilanes yielded triphenylchlorosilane with a yield of 3.02% and triphenyltrichlorodisilyl phenylene with a yield of 10.69% of the initial diphenyldichlorosilane.

SUB CODE: 07/ SUBM DATE: 21Oct65/ ORIG REF: 001

Card 2/2

L 39717-66 EWP(j)/EWT(m)/T IJP(c) RM/GD-2  
ACC NR: AF6007968 (A) SOURCE CODE: UR/0191/66/000/003/0033/0036

AUTHOR: Andrianov, K. A.; Varlanova, N. V.; Borisov, M. F. (Deceased); Kolchina, A. G.; Grebenshchikova, G. V.

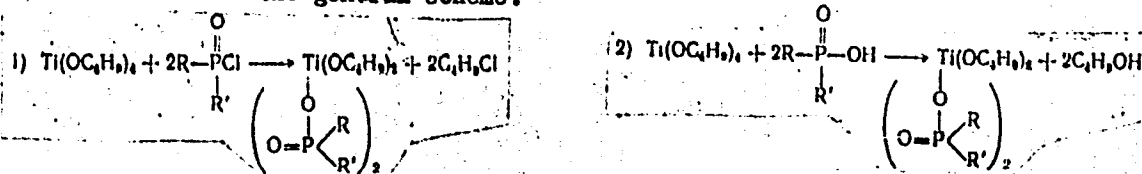
ORG: none

TITLE: Polybis-(organophosphinoxy)-titanomethylphenylsiloxanes

SOURCE: Plasticheskiye massy, no. 3, 1966, 33-36

TOPIC TAGS: organosilicon compound, condensation reaction, thermal analysis, organotitanium compound

ABSTRACT: The author prepared linear polyorganotitaniumsiloane with a regular distribution of Ti and Si atoms in their chains by a condensation of  $\alpha$ ,  $\omega$ -dihydroxymethylphenylsiloxane with bis(methylalkoxyphosphoxy)dibutoxytitanium and studied the influence of the bis(methylalkoxyphosphoxy)titanoxane groups on the properties of the polymers obtained. The bis(organophosphinoxy)dibutoxytitanium compounds were prepared by the reaction of the general scheme:



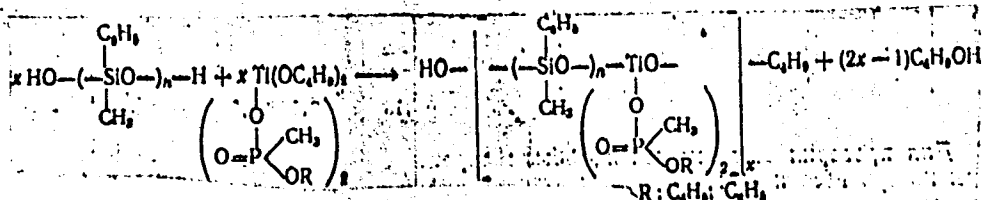
Card 1/4

UDC: 678.84

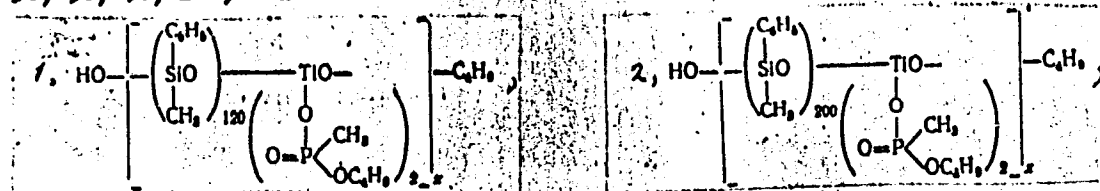
L 39717-66

ACC NR: AF6007968

Organophosphinic acid was added to tetrabutoxytitanium by drops, the mixture was mixed thoroughly and the products fractionally distilled. The reaction was exothermic. Thus obtained, bis(organophosphinoxy)dibutoxytitanium compounds were subjected to a condensation with  $\alpha, \omega$ -dihydroxymethylphenylsiloxane according to the general scheme:

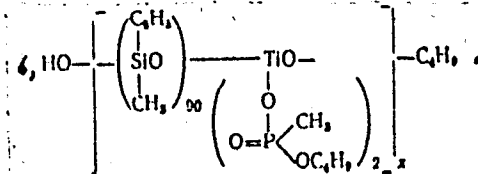
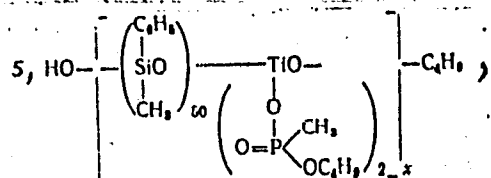
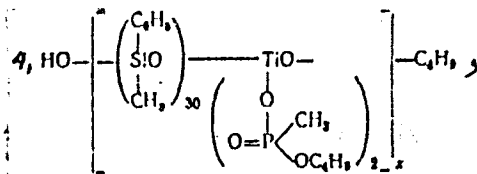
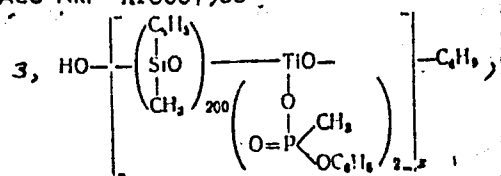


The condensation was performed at 175-180°C, first in air, then in  $\text{N}_2$ , and finally in vacuo (1-2 mm). The following compounds were prepared having a Si/Ti ratio - 30, 50, 90, 120, and 200:



Card 2/4

ACC NR: AP6007968



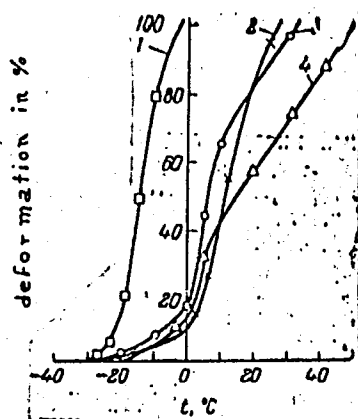
The properties of the polymers obtained were compared with those of polymethylphenylsiloxane. Their glass temperatures are in the more positive ranges (Fig. 1), and the endo- and exothermal peaks during thermodifferential analysis were at higher temperatures (Fig. 2). By heating at 400C for 4 hr in air, their weight losses were lower (Fig. 3). Orig. art. has: 4 fig. and 3 tables.

Card 3/4

L 09717-46

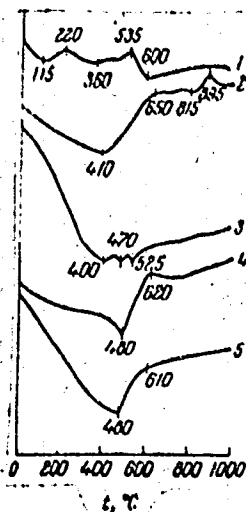
ACC NR: AP 6007968

Fig. 1. Results of thermomechanical study of polyorganophosphin-oxytitanium methylphenylsiloxanes



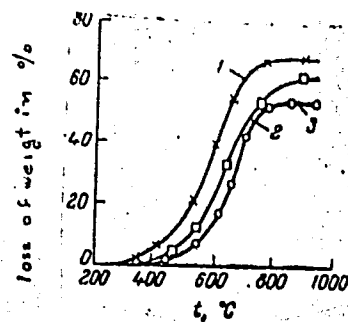
1-polymethylphenylsiloxane;  
2-Si:Ti=200; 3-Si:Ti=100; 4-Si:Ti=50

Fig. 2. Thermodifferential analysis



1-polymethylphenylsiloxane;  
2-Si:Ti=200; 3-Si:Ti=120;  
4-Si:Ti=90; 5-Si:Ti=60

Fig. 3. Loss of weight



1-polymethylphenylsiloxane;  
2-Si:Ti=90; 3-Si:Ti=200

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 007

Card 4/4



L 37212-66 EWT(n)/EWP(j) IJP(c) WW/RM

ACC NR: AP6014408 (A) SOURCE CODE: UR/0062/66/000/004/0680/0683

AUTHOR: Andrianov, K. A.; Yermakova, M. N. 36  
12ORG: Institute of Organometallic Compounds, Academy of Sciences SSSR  
(Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)TITLE: Synthesis of branched polyborodimethylsiloxanes <sup>1</sup>SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1966,  
680-683

TOPIC TAGS: siloxane, polycondensation, organoboron compound

ABSTRACT: Branched borodimethylsiloxane oligomers (A) with functional groups at the ends of the branches were synthesized and their condensation reactions were studied.  $\alpha, \omega$ -dihydroxydimethylsiloxanes were reacted with methyl borate to form A having 9 to 220 siloxane units. Attempted polycondensations gave polymers with a regular distribution of boron in the molecule chains. No cross-linking was attained even after 475 hours condensation. The maximum molecular weight of about 100,000 that was attainable was attributed to reaction of the water evolved with the boron of the borosiloxane chain and consequent lowering of polymer molecular weight. Orig. art. has 2 tables

Card 1/2

UDC: 542.91/541.6+547.244+546.287

L 36503-66 EWT(m)/EWP(j) RM  
 ACC NR: AP6017877 (A) SOURCE CODE: UR/0062/66/000/005/0855/0861  
 AUTHOR: Zhinkin, D. Ya.; Morgunova, M. M.; Popkov, K. K.; Andrianov, K. A. 2/  
R  
 ORG: none  
 TITLE: Reactions of alkylsilazanes with organic isocyanates  
 SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 5, 1966, 855-861  
 TOPIC TAGS: organic isocyanate compound, organosilicon compound, urea compound,  
*chemical reaction*  
 ABSTRACT: Reactions of organic isocyanates with various organosilazanes containing a hydrogen or a radical at the nitrogen atom were studied. The reaction of phenyl isocyanate and N-methylhexamethyldisilazane or phenyl isocyanate and N-diethyltri-methylsilylamine at 30-35° and atmospheric pressure involves rupture of the  $\equiv\text{Si}-\text{N}=\text{C}$  bond and the addition of the silyl group  $(\text{CH}_3)_3\text{Si}$  to the nitrogen of the isocyanate group, with formation of the corresponding urea derivatives. The following mechanism is proposed for the reactions between alkylsilazanes and phenyl isocyanate:

$$\begin{array}{ccccc}
 \begin{array}{c} \text{X} \\ | \\ (\text{CH}_3)_3\text{Si}-\text{N}-\text{Si}(\text{CH}_3)_3 \\ | \\ \text{O}=\text{C}=\text{NC}_6\text{H}_5 \end{array} & \rightarrow & \begin{array}{c} \text{X} \\ | \\ (\text{CH}_3)_3\text{Si}-\text{N}-\text{Si}(\text{CH}_3)_3 \\ | \quad | \\ \text{O}=\text{C}=\text{N}(\text{C}_6\text{H}_5)_2 \end{array} & \rightarrow & \begin{array}{c} \text{X} \\ | \\ (\text{CH}_3)_3\text{Si}-\text{N}-\text{Si}(\text{CH}_3)_3 \\ | \\ \text{O}=\text{C}-\text{NC}_6\text{H}_5 \end{array}
 \end{array}$$

Card 1/2 UDC: 661.518.5

L 36503-66

ACC NR: AP6017877

where X = H, CH<sub>3</sub>. The reaction of N,N'-trimethylsilyl-N'-phenylurea with phenyl isocyanate produced trimethylsilyl isocyanate and N,N'-diphenyl-N'-trimethylsilylurea. The following six new compounds were isolated and characterized: N,N'-bis(trimethylsilyl)-N'-phenylurea, N-phenyl-N'-phenyltrimethylsilylurea, N-trimethylsilylmethyl-N'-trimethylsilylphenylurea, N,N'-bis(trimethylsilylphenyl)-N'-methyldiurea, N-diethyl-N'-phenyltrimethylsilylurea, and N-diethyl-N'-phenyl-N"-trimethylsilylphenyldiurea. Their IR spectra are given. Orig. art. has: 3 figures.

SUB CODE: 07/ SUBM DATE: 29Nov63/ OTH REF: 008

Card

2/27/74

L 41222-66 EWT(m)/I/SWP(13) FM  
 ACC NR: AP6019547 (N) SOURCE CODE: UR/0190/66/008/006/1113/1116

AUTHORS: Andrianov, K. A.; Sipyagina, M. A.

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov  
 (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Polymerization of octamethylcyclotetrasiloxane in the presence  
of  $\alpha, \omega$ -disodiumhydroxymethylphenylsiloxanes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1113-1116

TOPIC TAGS: polymerization, siloxane

ABSTRACT: Polymerization of octamethylcyclotetrasiloxane has been carried out in the presence of  $\alpha, \omega$ -disodiumhydroxymethylphenylsiloxanes generally described by:  $\text{NaO}[(\text{CH}_2)_x(\text{C}_6\text{H}_5)\text{SiO}]_n\text{Na}$ , where  $x = 3, 6$ , and conditions for the synthesis of dimethylsiloxanes with a high average molecular weight have been found. It has been shown that the average molecular weight of polymers decreases as the distance between the terminal groups of the catalyst  $\alpha, \omega$ -disodiumhydroxymethylphenylsiloxane increases. Orig. art. has: 2 figures and 1 table. [Based on authors' abstract] [NT]

SUB CODE: 07/ SUBM DATE: 11Jun65/ ORIG REF: 007/ OTH REF: 009/  
 Card 1/1 UDC: 66.095.26+678.8

L 41227-66 ENT(m)/LWP(3)/1 10/101 10/101

ACC NR: AP6023430

SOURCE CODE: UR/0190/66/008/007/1226/1230

AUTHOR: Verkhotin, M. A.; Andrianov, K. A.; Zhdanov, A. A.; Kurashova, N. A.;  
Rafikov, S. R.; Rode, V. V.

ORG: Institute of Hetero-organic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Thermal degradation<sup>15</sup> of certain polymetallo-dimethylsiloxanes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 7, 1966, 1226-1230

TOPIC TAGS: polysiloxane, titanium compound, polymer degradation, organoaluminum compound,  
depolymerization, elastomer

ABSTRACT: The thermal degradation of polyaluminodimethylsiloxane<sup>1</sup> (PAS) and poly-titanodimethylsiloxane (PTS) (see Fig. 1) was studied in a vacuum at various temperatures. The predominant process in the thermal aging of the polymers was found to be depolymerization involving rupture of the Si-O bond and formation of hexamethylcyclotrisiloxane. The depolymerization begins after the gel formation maximum has been reached; at the same time, the aluminum atom in the elastomer chain slightly increases and the titanium atom considerably decreases the depolymerization rate as compared to polydimethylsiloxane. The gel formation maximum in polytitanodimethylsiloxane is shifted by 200° toward higher temperatures as compared to polyaluminodimethylsiloxane. In addition to the depolymerization, a homolytic rupture of Si-C and C-H bonds with the liberation of hydrogen, methane, and ethane takes place during the thermal degradation.

Card 1/2

UDC: 678.01:54+678.84

L 41227-66

ACC NR: AP6023430

0

dation of polyalumino- and polytitanodimethylsiloxane. Orig. art. has: 2 figures and 2 tables.

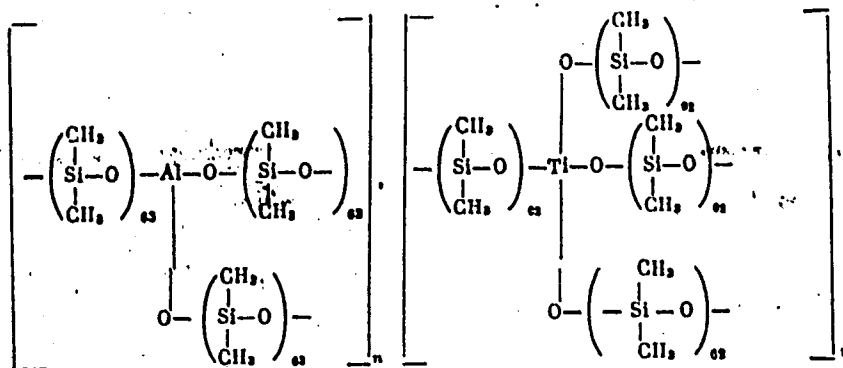


Fig. 1. Formulas of PAS and PTS.

SUB CODE: 07/ SUBM DATE: 16Jun65/ ORIG REF: 007/ OTH REF: 003

Card 2/2 MLP

L 41226-66 EWT(m)/I/EWP(j) IJP(c) RIA  
ACC NR: AP6023432 SOURCE CODE: UR/0190/66/008/007/1252/1256

AUTHOR: Andrianov, K. A.; Vardosanidze, Ts. N.; Nogaydeli, A. I.; Yakushkina, S. Ye.

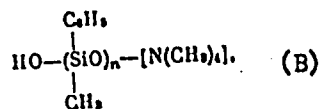
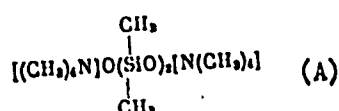
ORG: Institute of Hetero-organic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Polymerization of methylphenylcyclotrisiloxanes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 7, 1966, 1252-1256

TOPIC TAGS: siloxane, organosilicon compound, polymerization catalyst, catalytic polymerization

ABSTRACT: In a study of the polymerization of organocyclotrisiloxanes in reactions of anionic polymerization, the polymerization of tetramethyltetraphenylcyclotetrasiloxane (I) and trimethyltriphenylcyclotrisiloxane (II) in the presence of various catalytic systems was investigated. Special catalysts having the formulas



where  $n = 8, 11, 15$ , were synthesized. In the presence of (A), the polymerization of

Card 1/2

UDC: 66.095.26+678.84

L 37010-66 EWP(j)/EWT(m)/T IJP(c) RM/WW/JWD

ACC NR: AP6023434

SOURCE CODE: UR/0190/66/008/007/1312/1313

AUTHOR: Slonimskiy, G. L.; Andrianov, K. A.; Zhdanov, A. A.; Levin,  
V. Yu.; Belartseva, Ye. M.

ORG: none

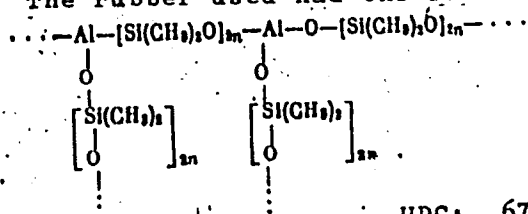
**TITLE:** Supramolecular structures of cross-linked high elastic polymers

SOURCE: *Vysokomolekulyarnyye soyedineniya*, v. 8, no. 7, 1966, 1312-1313

TOPIC TAGS: elastic polymer, ~~morphological form~~, supramolecular form, globular structure, siloxane, alumosiloxane, polyaluminodimethylsiloxane, network structure, rubber, polymer cross linking, polymer structure, polycondensation, solubility, elasticity

structure, polycondensation, solubility, elasticity

ABSTRACT: A study of the structure of cross-linked polyaluminodimethylsiloxane rubber was completed by means of electron microscopic photographs of platinum-carbon replica. A UMV-100 electron microscope was used. The rubber used had the following chemical structure:



**Card 1 / 2**

UDC: 678.01:53+678.84



2 31010-00

ACC NR: AP6023434

2

Polycondensation was carried out at 200C for 40 hours, after which the rubber lost its solubility completely, but preserved its elasticity. The electron microscopic photographs revealed a globular structure, with the smallest globules being 50—100 Å. Individual larger globules of 300—500 Å and aggregates of 3000—5000 Å were also observed. It was demonstrated that the cross-linked insoluble polyaluminodimethylsiloxane has morphological forms similar to those of the soluble high elastic polyaluminosiloxane. Curing is caused by the reaction of globular formations, either by chemical reactions, e.g., of OH groups, or by physical cohesion. The study revealed a previously unknown type of network structure of high elastic polymers. The structure is formed by coiling the elastic macromolecular chains and therefore can display high reversible deformations.<sup>15</sup> In the opinion of the authors this concept of the globular network structure can be expanded to other polymers.

[BN]

SUB CODE: 07, 11/ SUBM DATE: 05Feb66/ ORIG REF: 003/ ATD PRESS: 5035

Card 2/2

L 46605-66 EWT(m)/T/EWP(j) IJP(c) RM  
ACC NR: AP6012711 (A) SOURCE CODE: UR/0190/66/008/004/0668/0673

AUTHOR: Andrianov, K. A.; Yemel'yanov, V. N.

ORG: Institute of Organoelemental Compounds AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Condensation of tetrafunctional half-esters with di- and tetrafunctional organosilicon alcohols

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 4, 1966, 668-673

TOPIC TAGS: silicon, alcohol, silane, condensation reaction, ester, organosilicon compound

ABSTRACT: A study has been made of certain kinetic condensation principles of half-esters described by the general formula  $C[CH_2OC(O)(CH_2)_nCOOH]_4$ , where  $n = 2, 4$ , and 8 with bis-(hydroxyethoxymethyl)tetramethyldisiloxane and tetra-kis-(hydroxyethoxymethyl-dimethylsiloxy)silane. The rate constants of polyesterification and of gelation were calculated. It was determined that the rates of condensation up to the point of gelation and after the beginning of gelation are inversely proportional to the length of branching in half-esters, and are proportional to the functionality of organosilicon alcohol. The degree of condensation at the gel point increases with increased length of branching in half-esters. It was found that above the gel point soluble fractions of the polymer maintain the constant acid number corresponding to the acid number of the system just below the gel point. Orig. art. has: 5 figures

Card 1/2

UDC: 541.64\_678.04

1. 10/05/64

ACC NR: AP6012711

and 2 tables. [Based on authors' abstract.]

[NT]

SUB CODE: 07/ SUBM DATE: 21Apr65/ ORIG REF: 004/ OTH REF: 001/

Card 2/2 mje

L 45885-00 LIT(M)/COP(3) 00/00/00

ACC NR: AP6021606

SOURCE CODE: UR/0020/66/168/005/1057/1060

AUTHOR: Andrianov, K. A. (Academician); Vasil'yeva, T. V.; Romanova, R. A.

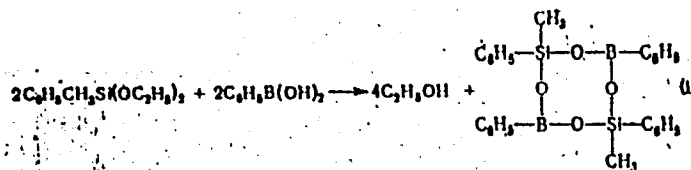
ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Organocycloborosiloxanes

SOURCE: AN SSSR. Doklady, v. 168, no. 5, 1966, 1057-1060

TOPIC TAGS: organoboron compound, siloxane

ABSTRACT: A study of the condensation of phenylboronic acid with diethoxydialkyl-(alkylaryl)-silanes and diethoxydialkyl-(alkylaryl)-siloxanes showed that the reaction depends on the framing alkyl or aryl groups at the silicon atom. Condensation of phenylboronic acid with diethoxyphenylmethylsilane and  $\alpha, \omega$ -diethoxymethylphenylsiloxanes in the absence of a catalyst proceeds with the formation of phenylmethylcycloborosiloxanes:



Card 1/2

UDC: 547.128

ACC NR: AP6025396 (A) SOURCE CODE: UR/0062/66/000/007/1145/1154

AUTHOR: Petrashko, A. I.; Yelinok, V. I.; Andrianov, K. A.; Zhdanov, A. A.;  
Gashnikova, N. N.; Golubkov, G. Ye.; Litvinova, L. F. 37  
B

ORG: All-Union Electrical Engineering Institute im. V. I. Lenin (Vsesoyuznyy elektro-  
tekhnicheskii institut); Institute of Organometallic Compounds, Academy of Sciences,  
SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Study of the conversions of polyorganosiloxanes in the course of thermal poly-  
condensation and catalytic polymerization

SOURCE: AN SSSR. Izv. Ser khim, no. 7, 1966, 1145-1154

TOPIC TAGS: catalytic polymerization, polycondensation, siloxane

ABSTRACT: Changes in certain properties of polyorganosiloxanes were followed during their synthesis from organosiloxane oligomers of various compositions. IR spectroscopic analysis confirmed the structural differences in the oligomers obtained by double decomposition and hydrolytic polycondensation. In the process of thermal and catalytic conversions, these differences disappear, and the polymers have a similar structure independently of the method by which the original oligomers were prepared. It is postulated that thermal polycondensation involves the formation of oxygen bridges between the molecular chains as a result of condensation of hydroxyl groups, and hydrocarbon bridges as a result of oxidation of methyl groups of neighboring molecular chains; the

Card 1/2

UDC: 546.287+542.97+542.952+543.422

L 05038-67 EWT(m)/ENP(1) IJP(c) WW/RM

ACC NR:

AP6031157

(AN)

SOURCE CODE: UR/0190/66/008/009/1618/1622

AUTHOR: Andrianov, K. A.; Pakhomov, V. I.; Gel'perina, V. M.; Mukhina, D. N.

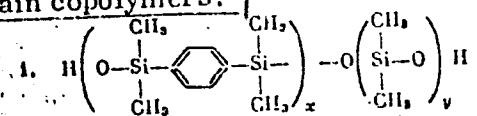
ORG: Scientific Research Institute for Plastics (Nauchno-issledovatel'skiy institut plasticheskikh mass)

TITLE: Catalytic polycondensation of 1,4-bis(dimethylhydroxysilyl)phenylene with diphenyldihydroxysilane and octamethylcyclotetrasiloxane

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 9, 1966, 1618-1622

TOPIC TAGS: polycondensation, catalytic polycondensation, copolymer, linear chain copolymer

ABSTRACT: A study was made of the polycondensation reaction of 1,4-bis(dimethylhydroxysilyl)phenylene with octamethylcyclotetrasiloxane and diphenyldihydroxysilane in the presence of alkali catalysts. These interactions were found to produce the following linear chain copolymers:

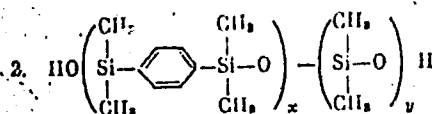


UDC: 541.64+678.84

Card 1/2

L 05038-07

ACC NR: AP6031157



The destruction of n-bis-(dimethylhydroxysilyl)phenylene was found to proceed much faster above 490C. Copolymers of 1,4-bis(dimethylhydroxysilyl)phenylene with octamethylcyclotetrasiloxane were found to form as a result of polycondensation as well as polymerization with opening of octamethylcyclotetrasiloxane. The polycondensation of compounds was studied at various ratios. Orig. art. has: 2 tables and 5 figures. [Based on authors' abstract]

SUB CODE: 07/ SUBM DATE: 23Jul65/ ORIG REF: 001/ OTH REF: 005/

Card 2/2 *pld*

ACC NR: AP6024019 SCURCE CODE: UR/0062/66/000/005/1009/1016

AUTHOR: Golubtsov, S. A.; Korobov, V. V. (Deceased); Popkov, K. K.; Trofimova, I. V.;  
Tumilayeva, R. A.; Andrianov, K. A.; Bolikova, Z. V.; Goloseva, R. M.; Gygenblik, A. A.  
Aristova, V. G.

ORG: none

TITLE: Reactions of formation of alkyl(aryl)chlorosilanes in a direct interaction between alkyl (aryl) chlorides and silicon. Report No. 6. Role of cuprous chloride in the formation of dialkyldichlorosilanes

SOURCE: AN SSSR. Izv. Ser khim, no. 6, 1966, 1009-1016

TOPIC TAGS: silane, chloride, silicon compound, copper compound, *CHEMICAL REACTION*

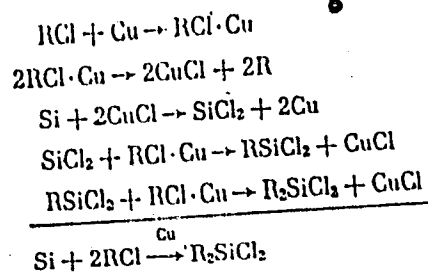
ABSTRACT: A mechanism is proposed for the formation of dimethyl(diethyl)dichlorosilane and methyl(ethyl)trichlorosilane during the reaction of methyl (ethyl) chloride with silicon on cuprous chloride. The proposed mechanism for the formation of dialkyl-dichlorosilanes is as follows:

UDC: 546.287+542.91+541.124+543.422

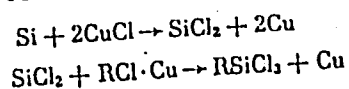
Card 1/2



ACC NR: AP6024019



The formation of alkyltrichlorosilane is represented as follows:



Experimental data obtained confirmed these mechanisms. Thermodynamic calculations of the initial stages of the reactions of methyl and ethyl chloride with silicon were performed. The formation of dichlorosilane is thermodynamically quite probable under the conditions of synthesis of alkylchlorosilanes. UV spectra of the products formed by the reaction of cuprous chloride with silicon showed a group of bands characteristic of the spectrum of  $\text{SiCl}_2$ . Orig. art. has: 2 figures and 5 tables.

SUB CODE: 07/ SUBM DATE: 12Feb64/ ORIG REF: 008/ OTH REF: 012

Card 2/2 *lll*

L 05204-67 EWT(J)/EWT(m) RM

ACC NR: AP7000759

SOURCE CODE: UR/0079/66/036/005/0895/0900

ANDRIANOV, K. A., KONONOV, A. M., MAKAROVA, N. N., Institute of  
Heteroorganic Compounds, Academy of Sciences SSSR (Institut elemento-  
organicheskikh soyedineniy AN SSSR)

Reaction of Ammonolysis of Trialkyl(aryl)Chlorosilanes" 1 20  
B

Moscow, Zhurnal Obshechey Khimii, Vol 36, No 5, 1966, pp 895-900

Abstract: The ammonolysis of methylethylphenylchlorosilane and methyldiphenylchlorosilane and the coammonolysis of trimethylchlorosilane with dimethylphenylchlorosilane and methyldiphenylchlorosilane were studied. In the ammonolysis of methylethylphenylchlorosilane, both in excess liquid ammonia and in a stream of gaseous ammonia, only dimethyldiethyldiphenyldisilazane is formed. In the ammonolysis of methyldiphenylchlorosilane, two products are formed: diphenylmethylaminosilane and dimethyltetraphenyldisilazane. The coammonolysis of trimethylchlorosilane with methyldiphenylchlorosilane in equimolar amounts does not lead to the formation of 1,1,1,3-tetramethyl-3,3-dipenyldisilazane, but proceeds separately, forming hexamethyldisilazane and methyldiphenylaminosilane.

If the reaction is conducted in excess trimethylchlorosilane, which reacts readily with ammonia, the coammonolysis product is formed. New organosilazanes and organoaminosilanes were produced and characterized. Methyldiethylphenylsilane was described. Orig. art. has: 3 tables. [JPRS: 37,177]  
Card 1/2 NDC: 547.245.167/65 1735

ACC NR: AP6033183

SOURCE CODE: UR/0079/66/036/010/1848/1850

AUTHOR: Andrianov, K. A.; Dabagova, A. K.; Yanovskaya, N. S.

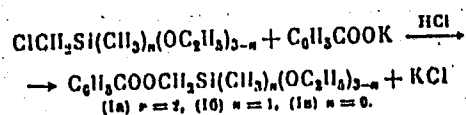
ORG: none

TITLE: Synthesis of methylethoxysilanes containing benzoate and terephthalate groups

SOURCE: Zhurnal obshchey khimii, v. 36, no. 10, 1966, 1848-1850

TOPIC TAGS: methylethoxysilane, benzoic acid, ~~silane derivative~~, terephthalic acid, silane, ~~organosilane~~ *organosilicon compound*

ABSTRACT: The five previously unreported organosilicon compounds containing acyloxymethyl groups were obtained by the reaction of potassium benzoate with the corresponding ethoxymethylchloromethylsilanes on heating in the presence of 3.3—3.9 wt% HCl, as a catalyst:



and by the reaction of potassium terephthalate with ethoxydimethylchloromethylsilane in the presence of HCl:

Cord 1/3

UDC: 546.287

ACC NR: AP6033183

Table 1. Composition of Physical Constants

Formula	bp (p in mm)	n <sub>D</sub> <sup>20</sup>	d <sub>4</sub> <sup>20</sup>	n <sub>D</sub> <sup>25</sup>		Saponifica- tion number	
				Found	Calc'd	Found	Calc'd
$\begin{array}{c} \text{CH}_3 \\   \\ \text{C}_8\text{H}_8\text{COOCH}_2\text{SiOC}_2\text{H}_5 \end{array}$	120—122° (2)	1.4660	1.0269	66.52	66.41	230	235
$\begin{array}{c} \text{CH}_3 \\   \\ \text{C}_8\text{H}_8\text{COOCH}_2\text{Si}(\text{OC}_2\text{H}_5)_2 \end{array}$	136—138 (2)	1.4770	1.0540	71.84	71.84	214	208
$\begin{array}{c} \text{CH}_3 \\   \\ \text{C}_8\text{H}_8\text{COOCH}_2\text{Si}(\text{OC}_2\text{H}_5)_3 \end{array}$	128.5 (2)	1.4680	1.0690	77.17	77.28	—	—
$\begin{array}{c} \text{CH}_3 \\   \\ \text{C}_8\text{H}_8(\text{COOCH}_2\text{SiOC}_2\text{H}_5)_2 \end{array}$	100—101 (2)	1.4820	1.0480	108.42	106.34	204	250.9
$\begin{array}{c} \text{CH}_3 \\   \\ \text{C}_8\text{H}_8\text{COOCH}_2\text{SiOOC}_2\text{H}_5 \\   \\ \text{CH}_3 \end{array}$	173—175 (2)	1.5340	1.1229	87.00	86.17	341	356

SUB CODE: 07/ SUBM DATE: 03Jul65/ ORIG REF: 002

Card 3/3



ACC NR: AP7011367

phosphoric acids, taken in 1:2 molar ratio at a temperature of 130-140°C. The titanophosphorganic compounds obtained are solid or resinlike products readily soluble in most organic solvents. Investigation of the stability of poly(diorganophosphonyl)titanoxane oligomers to the action of high temperatures in the presence of air oxygen established that thermooxidative destruction up to 450°C occurs chiefly in the direction of the oxidation of organic groups near the phosphorus atom framed by the titanoxane chain. No destruction at the Ti-O-P bond, and also at the Ti-O-Ti bond at this temperature is observed. Destruction of the Ti-O-Ti bond, that is the main chain of the molecule of poly(diorganophosphonyl)titanoxane upon heating oligomers to 800°C was not observed. Orig. art. has: 7 figures, 3 formulas and 6 tables. [JPRS: 40,351]

Card 2/2

ACC NR: AP7002938

(A)

SOURCE CODE: UR/0020/66/171/006/1352/1354

AUTHOR: Rafikov, S. R. (Academician AN KazSSR); Rode, V. V.; Verkhotin, M. A.;  
Andrianov, K. A. (Academician)

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut  
elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Mechanism of thermal stabilization of polydimethylsiloxane by titanium and  
iron compounds

SOURCE: AN SSSR. Doklady, v. 171, no. 6, 1966, 1352-1354

TOPIC TAGS: lubricant additive, lubricant, silicone lubricant, silicone lubricant,  
thermal stability

ABSTRACT:

A study was made of the mechanism of the effect of small amounts of titanium and iron compounds on the thermal degradation of polydimethylsiloxane (PS) in vacuum under isothermal conditions. The results were compared with previously obtained thermal degradation data on polytitanodimethylsiloxane (PTS) (PS containing Ti atoms in the backbone). The additives tested were tetrabutoxytitanium (BT), dibutoxytitanium bis(acetylacetonate) (AT), iron acetylacetonate (AI), titanium oxides (OT), and iron oxides (OI). The amount of BT, AT, or AI to be added was calculated so there was one equivalent of metal per 62 repeat units of PS, the same ratio as in the PTS.

Card 1/2

UDC: 547'128

Card 2/2

Andrianov, L. I.

PLATE I BOOK INFORMATION

007/302

Mechnoobrazovanie obrabotno-mekhanicheskoy proizvodstva obrabotki

Mekhanicheskoy i obrabotnoy mekhanicheskoy obrabotki  
v 1958. 519 p. 12,000 copies printed

Ed. L. I. Andrianov, Doctor of Technical Sciences,  
Professor, Leningrad Polytechnical Institute,  
Leningrad, U.S.S.R.  
Author, Candidate of Technical Sciences,  
Leningrad, U.S.S.R.  
L. I. Andrianov, Candidate of Technical Sciences,  
Leningrad, U.S.S.R.

Presented in this book is included the production of machine tools and  
in the production of machine tools.  
The book is intended for the production of machine tools and  
developed and tested in the production of machine tools and  
of machine tools. It contains various methods of production  
and their applications in the production of machine tools and  
other fields of machine tools. The book is intended for the  
quality control of machine tools. The book is intended for the  
and instruments currently used in the production of machine tools  
critical processes in the production of machine tools.

# MECHANIZATION AND AUTOMATION OF MACHINING

1. Production of Metal Elements (Andrianov, L. I., Engineer)

Automatic welding  
Automatic welding  
Automatic welding

2. Automatic Welding in Tractor Building (Andrianov, L. I., and

L. I. Andrianov, Engineers)  
Automatic welding and fun bracket  
Welding of the tractor cab  
Automatic welding of a chassis gear  
Automatic welding conveyor

3. Automatic Welding in Converter and Boiler Manufacturing (Andrianov, L. I., and

L. I. Andrianov, Engineers)  
Automatic welding and automation of welding processes  
Mechanization of preparation and assembly operations in boiler  
making

4. Mechanization and Automation (Cont.)

Automatic welding for production of welded pipes (Sviridov, Y. A., and  
L. I. Andrianov, Engineers)  
Preparation of the plate, crimping and bending  
Preparation of the plate, crimping and bending

5. Automation of "Vibro" Surfacting [With Vibrating Electrode] (Andrianov, L. I., and

L. I. Andrianov, Engineers)  
Automation of "Vibro" Surfacting [With Vibrating Electrode] (Andrianov, L. I., and  
L. I. Andrianov, Engineers)  
Automation of "Vibro" Surfacting [With Vibrating Electrode] (Andrianov, L. I., and  
L. I. Andrianov, Engineers)

6. Mechanization of Electrode Production (Andrianov, L. I., and  
L. I. Andrianov, Engineers)  
Mechanization of electrode production for preparation and treatment of coating  
equipment  
Mechanization of coating

Cont. 8/15



ANDRIANOV, K. /.

Pluses and minuses of a pamphlet ("Safety engineering in oil well production" by E.Manvelian. Reviewed by K.Andrianov).  
Okhr.truda i sots.strakh. no.9:87-88 S '59. (MIRA 13:1)

1. Tekhnicheskoy inspektor Tsentral'nogo komiteta profsoyuzov  
rabochikh neftyanoy i khimicheskoy promyshlennosti.  
(Oil fields--Safety measures) (Manvelian, E.)

KUTUKOV, A.I., red.; ZAYTSEV, A.P., red.; DROGALIN, G.V., red.; POLESIN, Ya.L., red.; KOSTYUKOV, N.M., red.; KURAS, D.M., red.; LUZHNIKOV, A.M., red.; RODIONOV, I.S., red.; BLOKH, S.S., red.; SULTANOV, D.K., red.; BIBILUROV, V.P., red.; PETROV, A.I., red.; KHARCHEVNIKOV, N.M., red.; ANDRIANOV, K.I., red.; GADZHINSKAYA, M., red. izd-va; BERESLAVSKAYA, L.Sh., tekhn. red.

[Safety regulations for petroleum and gas producing industries]  
Pravila bezopasnosti v neftegazodobyvaishchey promyshlennosti.  
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1960.  
123 p. (MIRA 14:3)

1. Russia (1917- R.S.F.S.R.) Gosudarstvennyy komitet po nadzoru za bezopasnym vedeniem rabot v promyshlennosti i gornomu nadzoru.
  2. Tsentral'nyy apparat Gosgortekhnadzora RSFSR (for Kutukov, Zaytsev, Drogalin, Polesin, Kostyukov, Kuras, Luzhnikov, Rodionov, Blokh).
  3. Vsesoyuznyy nauchno-issledovatel'skiy institut po tekhnike bezopasnosti (for Sultanov).
  4. Upravleniya ukrugov Gosgortekhnadzora RSFSR (for Bibilurov, Petrov, Kharchevnikov).
  5. Tsentral'nyy komitet profsoyuza rabochikh neftyanoy i khimicheskoy promyshlennosti (for Andrianov).
- (Oil fields--Safety measures)  
(Gas industry--Safety measures)

ANDRIANOV, K.I.; CHINCKUK, P.Yu.

Engraving of the kilometer grid. Geod. i kart. no. 12:43-  
44 D '60. (MIRA 14:1)

(Map printing)

S/135/61/000/004/010/012  
A006/A101

AUTHORS: Andrianov, K. I., Supereko, O. D., Nikolayeva, L. I., Kudryavtsey  
K. V. Yemel'yanenko, N. L., Engineers

TITLE: Ceramic Nozzles of the A-547r Semi-Automatic Machine for Welding  
in Carbon Dioxide

PERIODICAL: Svarochnoye proizvodstvo, 1961, No. 4, pp. 37 - 38

TEXT: Welding in carbon dioxide with consumable electrode is used at the Chelyabinsk Tractor Plant for joining tractor parts on the A-547r semi-automatic machine, where the gas flow is directed by a chromeplated brass nozzle (Fig. 1), placed on the rubber housing of the burner tip. The use of this nozzle presents however, a series of deficiencies, such as short-circuits of the welding current; sticking of metal splashings to the internal nozzle surface, and short service life of the nozzle. The laboratory of mineral ceramics at the Plant developed ceramic nozzles to replace the chrome-plated brass nozzles, prepared in a metallic mold by press-forming from a ceramic mass of 12 - 14% moisture. The components of the ceramic material were dried, crushed, screened, and mixed during 8 h. The material was then wetted with water to 28 - 30% for

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S/135/61/000/004/010/012  
A006/A101

Ceramic Nozzles of the A-547r Semi-Automatic Machine for Welding in Carbon Dioxide

seven days and then molded. The molded nozzles were dried at room temperature and roasted in an electric furnace. Ceramic nozzles of the following compositions were manufactured by the described technology:

Designation of materials	of the mass Composition in %					
	I	II	III	IV	V	
Talcum chlorite	80	70	60	-	-	
Refractory clay	20	30	40	15	20	
Quartz	-	-	-	20	15	
Fluorspar	-	-	-	30	25	
Porcelain waste	-	-	-	10	35	
Kaolin	-	-	-	25	5	

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Ceramic Nozzles of the A-547r Semi-Automatic Machine for Welding in Carbon Dioxide

Talcum-chlorite containing nozzles were roasted according to graph 3. Tests performed with experimental ceramic nozzles proved satisfactory. The replacing of brass nozzles by the new ceramic ones presents the following advantages: the possibility of a contact between the nozzle and the part to be welded is excluded the durability of nozzles is raised by a factor of 14 - 16; scarce chrome-plated brass is replaced by cheap ceramic material; labor consuming processes of manufacturing the nozzles are substituted by advanced press forming methods, eliminating subsequent mechanical treatment; the time of exchanging and cleaning the nozzles from metal splashings is considerably reduced. There are 1 table and 4 figures.

ASSOCIATION: Chelyabinskiy traktorny zavod (Chelyabinsk Tractor Plant)

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Ceramic Nozzles of the A-547r Semi-Automatic Machine for Welding in Carbon Dioxide

**Figure 1:**

The adapter nozzle of a semi-automatic machine for welding in carbon dioxide; 1-exchangeable tip; 2-nozzle; 3-spiral; 4-external nozzle tube; 5-rubber insulation tube; 6-handle

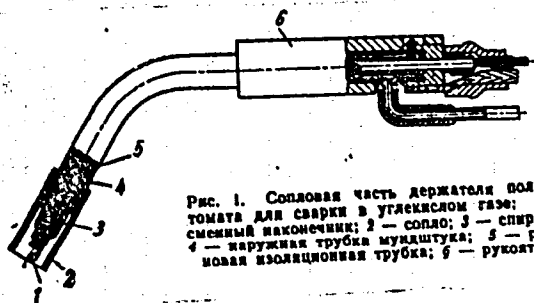


Рис. 1. Сопловая часть держателя полуавтомата для сварки в углекислом газе: 1 — сменный наконечник; 2 — сопло; 3 — спираль; 4 — наружная трубка муфштук; 5 — резиновая изоляционная трубка; 6 — рукоятка.

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**Figure 3:**

Conditions for roasting of articles composed of materials I, II, III.

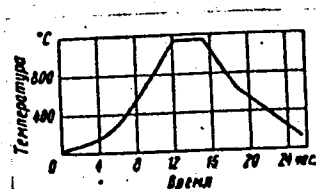


Рис. 3. Режим обжига изделий из шихты составов I, II, III.

VASMUT, A.S.; ANDRIANOV, K.I.

The variomat and its applicability in cartography. Geod. i kart. no.12:  
55-61 D '63. (MIRA 17:1)



ANDRIANOV, K. K.

"Elements of the Theory of Grain Separation According to Specific Gravity and the Study of the Kinematics of a Circular Sieve." Cand Tech Sci, Omsk Agricultural Inst, Omsk, 1954. (RZhMekh, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11.)

SO: Sum. No. 521, 2 Jun 55

SOV/81-59-12-44301

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 12, p 495 (USSR)

AUTHORS: Andrianov, K.N., Gribanova, O.I., Zabyrina, K.I., Chernichkina, A.S.

TITLE: Heat-Resistant Electric Insulation Varnishes Based on Silicon-Organic Compounds

PERIODICAL: Tr. Vses. elektrotekhn. in-ta, 1958, Nr 62, pp 16-28

ABSTRACT: Electric insulation varnishes based on polymeric silicon-organic compounds containing siloxane Si-O-Si bonds form a new type of insulation with operation temperatures of up to 180°C. The properties and possible application fields have been described of the polymethylphenylsiloxane resin K-40, of the gluing and coating varnishes K-44, K-47, K-48 based on modified K-40, of the gluing and coating varnish EF-5 and the impregnating varnish EF-3 based on polyethylphenylsiloxane resin. The silicon-organic varnishes are more advantageous than those on organic base (bitumen-oil and glyphthalic varnishes) with respect to their heat- and water-resistance and the dependence of the dielectric characteristics on the temperatures.

M. Barkova

Card 1/1

ANDRIANOV, K.S.

Study of Quaternary sediments in the Tatar A.S.S.R. and problems  
of further investigations. Izv.Kazan.fil. AN SSSR. Ser.geol.  
nauk no.9:225-239 '60. (MIRA 15:12)  
(Tatar A.S.S.R.—Geology)

YEGOROV, Yu.L.; ANDRIANOV, L.A.

Toxicity of heptyl, nonyl, and decyl alcohols. Uch. zap. Mosk.  
nauch.-issl. inst. san. i gig. no.9:47-49 '61 (MIRA 16:11)

\*

ANDRIANOV, L. N.

PA 19/19790

Hydro/Petroleum  
Geophysics

Aug 86

"Problems Pertaining to the Physics of Oil Strata  
in Solving Fundamental Problems of Underground Oil  
Hydraulics," L. N. Andrianov, 3 pp

"Nert Khov" No 8

Discusses problems of petroleum strata physics and  
underground hydraulics. Infiltration of new ideas  
changes concepts on principles for the movement of  
petroleum in porous media. Refers to Reynolds  
(Pavlovsk, Enchevskiy, Kostov, et al) hydrodynamic  
cal criterion for problems of underground petroleum  
hydraulics, now used, but which do not agree with  
experimental data. Describes paradox of under-  
ground hydraulics. Emphasizes need for closer  
relationship between petroleum hydraulics and  
physics of petroleum strata.

19/19790

ANDRIANOV, L.P.

Medicolegal significance of pseudoplankton for the diagnosis of drowning. Sud.-med. ekspert. 5 no.1:20-25 Ja-Mr '62. (MIRA 15:4)

1. Kafedra sudebnoy meditsiny (zav. - dotsent B.S.Kasatkin)  
Permskogo meditsinskogo instituta.  
(DROWNING) (PLANKTON)

ANDREYEVA, Ye. I., Geroy Sotsialisticheskogo Truda; ANDRIANOV, L. T.,  
prepodavatel'

Effect of perennial grasses on soil fertility and feed balance.  
Zemledelie 8 no.12:40-43 D '60. (MIRA 13:11)

1. Predsedatel' kolkhoza imeni Kominternu, Michurinskogo rayona,  
Tambovskoy oblasti (for Andreyeva). 2. Sel'skokhozyaystvennyy  
tekhnikum imeni I.V. Michurina (for Andrianov).  
(Grasses) (Soil fertility)

ANDRIANOV, M. (g.Elektrostal' Moskovskoy oblasti); LYSOV, N. (g.  
Elektrostal' Moskovskoy oblasti)

Automatic control of community television amplifiers. Radio  
no.1:44 Ja '61. (MIRA 14:9)  
(Television)



ANDRIANOV, M.; GAL'PERIN, I.

Mechanize the evening receiving and payment operations. Den. 1  
kred. 21 no.8:66-67 Ag '63. (MIRA 16:9)

1. Upravlyayushchiy Timiryazevskim otdeleniyem Gosbanka Moskv (for  
Andrianov). 2. Glavnyy bukhgalter Timiryazevskogo otdeleniya Gosbanka  
Moskv (for Gal'perin).

(Banks and banking--Accounting) (Machine accounting)

ANDRIANOV, M.F.; PANCHENKO, V., red.; LUCHKIV, M., tekhn.red.

[Mechanization of labor-consuming operations in viticulture]  
Mekhanizatsiia trudemistykh protsessiv u vynohraderstvi.  
Uzhhorod, Zakarpats'ke obl.vyd-vo, 1958. 21 p. (MIRA 13:3)

1. Zastupnik nachal'nika Zakarpats'kogo upravlinnya sil's'kogo  
gospodarstva (for Andrianov).  
(Viticulture) (Farm mechanization)

ANDRIANOV, M. I.

USSR/Engineering - Industrial tools

Card 1/1 Pub. 103 - 6/23

Authors : Andrianov, M. I.

Title : Chrome plating of cutting tools

Periodical : Stan. 1 instr. 2, 21-23, Feb 1954

Abstract : The reasons for the spalling of chrome coatings on cutting tools are explained. Preliminary preparation of cutting tool surfaces for proper and effective chrome plating is described. Such preparation eliminates the necessity of reducing the tool dimension; the chromium applied to the prepared surface consolidates with the basic metal of the tool thus warranting a high wear resistance of the latter. Ideas of attaining high quality chrome coatings are presented. The initial coating should produce a layer of about 0.003 - 0.005mm; the layer thickness ring following coating should not exceed 0.02 - 0.04 mm. Drawings.

Institution : .....

Submitted : .....

SOV/137-59-3-7182

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 319 (USSR)

AUTHOR: Andrianov, M. I.

TITLE: Chrome Plating of Cold-upsetting Dies (Khromirovaniye kholodnovy-sadochnykh shtampov)

PERIODICAL: Tekhnol. avtomobilestroyeniya. 1958, Nr 4, pp 59-63

ABSTRACT: It is established that the cause of the rapid wear of dies (D) is the upsetting reduction of their bodies under the action of the great impact force of the automatic press and the consequent cracking and partial crumbling-out of Cr on the die surface. The author proposes a new technique for chrome-plating D which increases the production of machine parts with each D by 200 - 300%. Newly made D's are not chrome-plated and are worked to their ultimate reduction. Then they are chrome-plated in a bath of the following composition (in g/liter):  $\text{CrO}_3$  150 and  $\text{H}_2\text{SO}_4$  1.5 at a cathode cd of 15 - 35 a/dm<sup>2</sup> and 55 - 57°C to a thickness of <0.15 mm along the diameter, to avoid distortion of the die configuration and an increase of brittleness of Cr. The consecutive utilization of steel anodes

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SOV/137-59-3-7182

### Chrome Plating of Cold-upsetting Dies

(U8 or U10) as they dissolve is recommended for chrome-plating D with smaller die-groove diameters. A special device is proposed for chrome-plating square D. A method is adduced for insulating unworn spots with Fe foil thus eliminating the operation of wearing-in of the rebuilt D.

A. I.

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SOV/113-59-4-15/19

12(2)  
25(1)

AUTHOR: Andrianov, M.I.

TITLE: Antifriction Phosphatizing

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 4, pp 41-42 (USSR)

ABSTRACT: Depending upon the specific pressure, the material and the environment temperatures of rotating parts, lubrication conditions and similar factors, different antifriction coatings are used: tinning, copper-plating, oxidizing, chrome-plating and parkerization, whereby the latter is the cheapest and most effective method. The technology of this process was developed at the Moskovskiy avtozavod imeni Likhacheva (Moscow Automobile Plant imeni Likhachev), where this method has been successfully used for a number of years. The effectiveness of the antifriction coating depends on the surface preparation of the part and the quality of the parkerizing solution. The surface of the parts are subjected to electrolytical degreasing in a solution consisting of 60-70 g/l of caustic soda, and 70-60 g/l of calcinated soda. The temperature of the solution is

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SOV/113-59-4-15/19

## Antifriction Phosphatizing

25-40° C, the current density 5-7 amps/sq dcm. The treatment at the cathode lasts 3-4 minutes, at the anode 1-2 minutes. After washing the parts in warm water, they are pickled in a 5-10% sulfuric acid solution at a temperature of 15-40° for a period of 0.5-1 minute. They are then washed and placed for 3-5 minutes into a soda-soap solution, consisting of 50-75 g/l calcinated soda and 10-15 g/l liquid or household soap at a temperature of 55-75°. After washing in a stream of hot water the parts are placed into the parkerizing tanks.

The parkerizing tank contains a "Mazhef" salt solution, whereby 45-50 g are taken per tank volume liter. The solution is boiled for 1-2 hours with periodic stirring. After this operation, the solution will be allowed to settle for about 3-4 hours. The settled solution is filled into a spare tank and the working tank is cleaned of the precipitate. Then, the solution is again filled into the working tank and water is added up to the required level. The solution prepared in this way must have an acidity of 38-40 points. The solution is heated to boiling and barium carbonate is added in small

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#### Antifriction Phosphatizing

amounts, 0.2-0.5 g/l, whereby the solution must be boiled for 1-2 hours. Then manganese carbonate is added in small amounts 1-2 g/l, to the boiling solution, and the boiling is continued for another 1 to 2 hours. In the finished solution, the total acidity must be 30 to 35 points, the free acidity must be 3.5 to 5 points and the manganese content must be not less than 3.5 to 4 g/l. During the parkerizing process it is necessary to maintain the prescribed solution level and the temperature at 96 to 100°. For this purpose, hot water at 95° is added. In case the "Mazhef" salt concentration decreases, reserve solution is added. During normal operation of the tank, the parkerizing process will be terminated within 15-20 minutes. Devices used in this process must be manufactured of steel Zh-3 and Zh-4 or of conventional nickel-plated steel. After parkerizing, the parts are washed in hot water and in a potassium bichromate solution, 50-60 g/l, at a temperature of 75°. The parts are then washed once more and are placed into spindle oil at a temperature of 120-130°. For parts where kerosine is used during the grinding process,

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Antifriction Phosphatizing

push rod plates for example, the degreasing operation and the pickling are not recommended. The parts are placed directly into the soda - soap solution. Thereby, the surface film created by the parkerizing process will have a fine crystalline structure with a high antifriction property. Figure 1 shows a diagram of the parkerizing tank. There is 1 photograph and 1 diagram.

ASSOCIATION: Moskovskiy avtozavod imeni Likhacheva (Moscow Automobile Plant imeni Likhachev).

Card 4/4

ANDRIANOV, N.I., ENZO.

Chromium plating of die-casting molds and metal-cutting tools  
in a self-adjusting electrolyte. Mashinostroyeniye no. 5302-63  
800 162 (MJRA 1832)

ANDRIANOV, M.I.; BOGORAD, L.Ya., red.

[Using multiple-purpose mechanized devices and iron anodes in chromium plating of die-casting molds and cutting tools in self-regulating electrolytes] Khromirovanie pressform i instrumenta v samoreguliruiushchikhsia elektrolitakh s primeneniem universal'no-mekhanizirovannykh prispособlenii i zheleznykh anodov. Leningrad, 1964. 29 p.

(MIRA 18:4)

ANDRIANOV, N.S.

Vertical temperature zones of the Soviet Carpathians. Nauk. zap.  
L'viv. un. 40:189-198 '57. (MIRA 11:6)

1. Gosudarstvennyy universitet, Chernovtsy.  
(Carpathian Mountains--Physical geography)  
(Carpathian Mountains--Climate)